

## **IN THE SPECIFICATION**

Please replace the paragraph beginning at page 25 before line 16 with the following:

--Figure 11 depicts another embodiment of the present invention, where the optical filter comprises a rare earth metal thin film deposited on an optical output surface of the light source. In Figure 11, the hydrogen gas detector 50 comprises a light source 32 having an optical output surface 53. A rare earth metal thin film 56, which functions as the optical filter, is deposited on the output surface 53 of the light source 52. Said rare earth metal thin film 56 may comprise a rare earth metal selected from the group consisting of trivalent rare earth metals that are reactive with hydrogen to form both metal dihydride and metal trihydride reaction products, and such metal dihydride and metal trihydride reaction products have differing optical transmissivity. The rare earth metal thin film 56 is heated to an elevated temperature by a thermal energy source 54 that is separate from the light source 52. The rare earth metal thin film 56 is also overlaid by a protective layer 57, which may comprise a hydrogen-permeable material, that is doped with a dopant such as Mg, Ca, Al, Ir, Ni, and Co, or a metal selected from the group consisting of palladium, platinum, and iridium.. --

## **IN THE CLAIMS**

Please amend claim 63 as indicated.

Claim 30 (Previously Amended) A hydrogen gas detector, comprising:

a light source;

a thermal energy source that is separate from the light source;